Historic Residential Electric Rates, Supply Portfolio and Unit Prices of NorthWestern Energy

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Introduction

The following graphs show the actual residential electric rates, default supply portfolio and unit prices of NorthWestern Energy (NorthWestern) through July 2010,[1] adjusted for inflation. This information is available in published tariffs and regular "electric supply tracker" dockets at the Montana Public Service Commission (PSC).[2]

NorthWestern's "default" supply portfolio serves customers that did not enter into a contract with a competitive electricity supplier following deregulation. Since 1998, most default supply customers – including virtually all residential customers – have paid an electric rate ($/kWh) consisting of at least four charges: (1) A **distribution** delivery service charge; (2) a **transmission** delivery service charge; (3) an electric **supply** charge; and (4) a universal system benefits (**USB**) charge. Whereas the transmission and distribution charges pay for NorthWestern's "wires and poles", the supply charge pays for the electricity (**supply**) that it purchases and generates for default customers.

At the time of deregulation, the Montana Legislature created the USB charge – set to annually collect 2.4% of NorthWestern's retail sales revenue in 1995 – "to ensure continued funding of and new expenditures for energy conservation, renewable resource projects and applications, and low-income energy assistance."[3] NorthWestern uses a portion of USB funds for conservation and efficiency efforts. Additionally, it has managed a larger, more cost-effective portfolio of conservation and efficiency programs since 2004. Known as demand-side management (**DSM**), these programs are funded through the supply charge.

When successful, DSM efforts reduce sales, which in turn reduces the number of distribution, transmission, and supply rates that NorthWestern collects to pay for its wires, poles and other owned infrastructure. To ensure this reduction in sales does not diminish its DSM efforts, the PSC allows NorthWestern to collect "lost revenues" that it would have collected anyway – through the transmission, distribution and supply charges – had it not reduced consumption through DSM programs.

NorthWestern buys a significant portion of its supply on the open market, either for a **fixed price and short term** (up to eighteen months), or on an hour-ahead, **spot market** basis. NorthWestern buys about half of its supply, however, through long-term contracts with PPL Montana, LLC (**PPL**); Invenergy, LLC (**Judith Gap**); and pre-deregulation "qualifying facilities" (**QFs**). PPL generates supply from its coal-fired power plants and hydroelectric dams. Judith Gap is a wind farm that has provided supply since November 2005, and has enabled NorthWestern to comply with Montana's renewable portfolio standard, which has existed since 2007.

The QFs, which are defined by federal law and consist mostly of thermal power plants, had eleven contracts with NorthWestern's predecessor before deregulation. To recover the higher-than-market prices these QFs are entitled to under their pre-deregulation contracts, NorthWestern collects part of their cost through the supply charge, and most of their remaining "out-of-market" cost through a QF Deregulation "Transition Charge" that appears as a separate rate.

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[1] Rates are current through April 2011, but all other figures after June 2010 are estimates; May and June, 2011 will be updated in August, 2011.

[2] *See e.g.* PSC Dockets D2011.5.38 & D2010.7.74.

[3] Mont. Code Ann. § 69-8-402 (2009).

As of April 2011, the "**other**" category includes contracts all post-deregulation QFs, the U.S. Bureau of Reclamation's Tiber Dam, and Basin Creek Equity Partners, LLC, which operates a natural gas-fired power plant used to meet peak demand.

Since January 2009, NorthWestern has generated some of its own supply at one unit of a coal-fired power plant it owns in Colstrip, Montana (**Colstrip Unit 4**). It has also operated the David Gates Generating Station (**David Gates**) since January 2011. The primary function of this power plant is not to provide supply, but rather "the reserve capacity necessary to maintain transmission system reliability and balance on a moment to moment basis as customer demand and available resources fluctuate."[4] As a wind farm, Judith Gap is one of the resources that fluctuates, and probably requires about a quarter of Mill Creek's current capacity to level some of its fluctuation. Because this cost is attributable to Judith Gap, the graphs show about a quarter of the current cost of Mill Creek allocated to Judith Gap.

The "**cap**" is a rate adjustment that ensures that the monthly percentage increase for each customer class is no greater than the residential customer rate class increase.

"**Line losses**" are electricity wasted in the form of heat and electromagnetic energy whenever supply is moved across power lines. To set the transmission, distribution and supply rates, NorthWestern assumes a loss factor for each customer class. For example, it assumes that 8.51% of the supply delivered to its system is lost before reaching residential customers. The graph on page 10, which shows total electric supply for all classes of default customers, uses a system average loss factor of about 7.5%.

[4] NorthWestern Bill Insert, p. 1 (Jan. 2011).

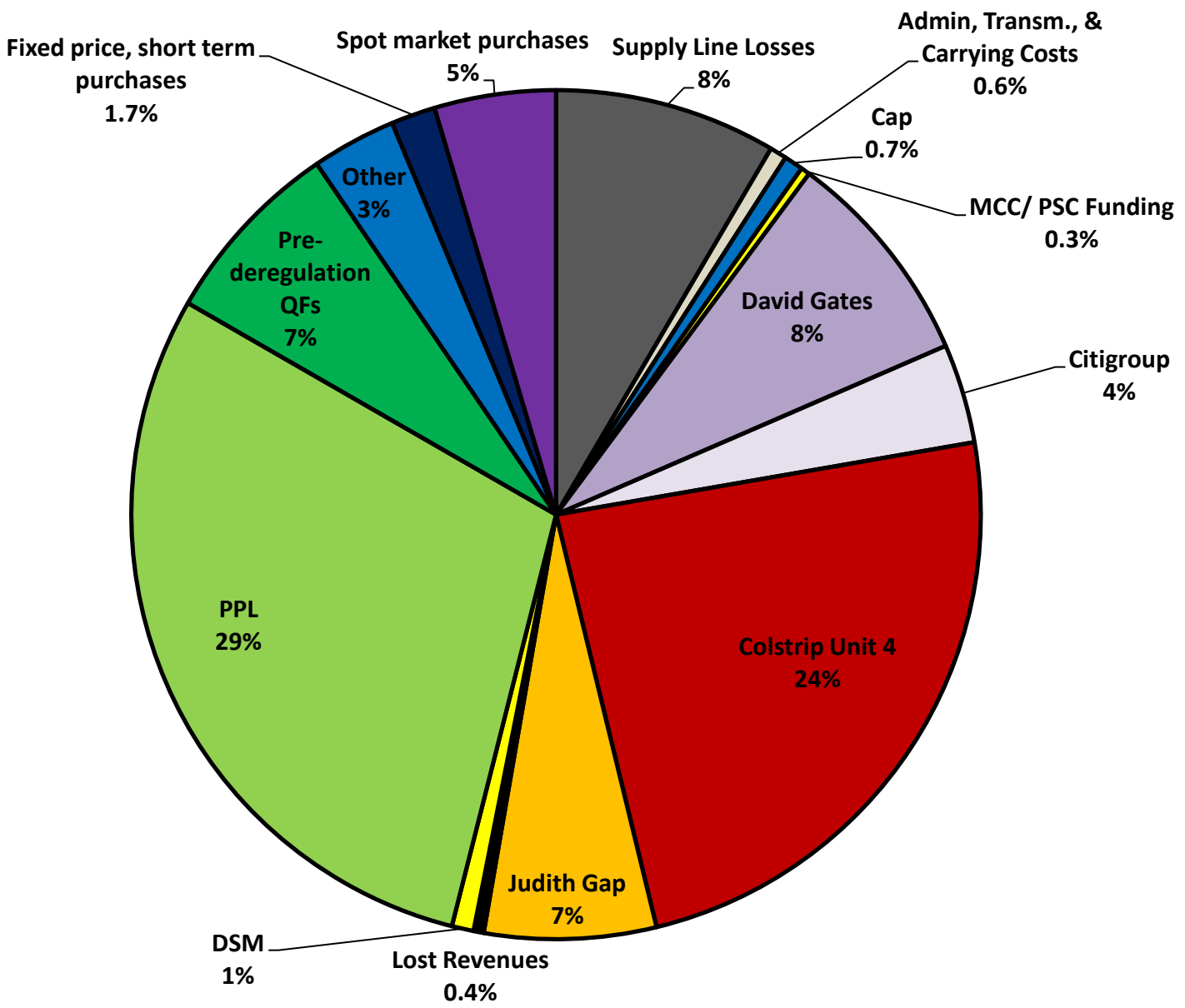
Two other lines that appear on the bill of residential customers are not shown on the graphs. First, the Bonneville Power Administration (BPA) residential exchange credit is a means of sharing the benefits of low-cost federal hydropower with NorthWestern customers. BPA, an agency that markets the supply generated by federally owned dams on the Columbia River, provided inexpensive supply to the region until the 1970s, when increasing demand forced it to not renew contracts with certain utilities like NorthWestern. "In order to avoid an energy crisis and to redress BPA's diminishing ability to satisfy the region's power demands," Congress authorized BPA to continue to share the benefits of low-cost federal hydropower through a residential exchange program.[5] Because this credit does not affect NorthWestern's approved costs, and may not continue indefinitely, it does not appear on the graphs.

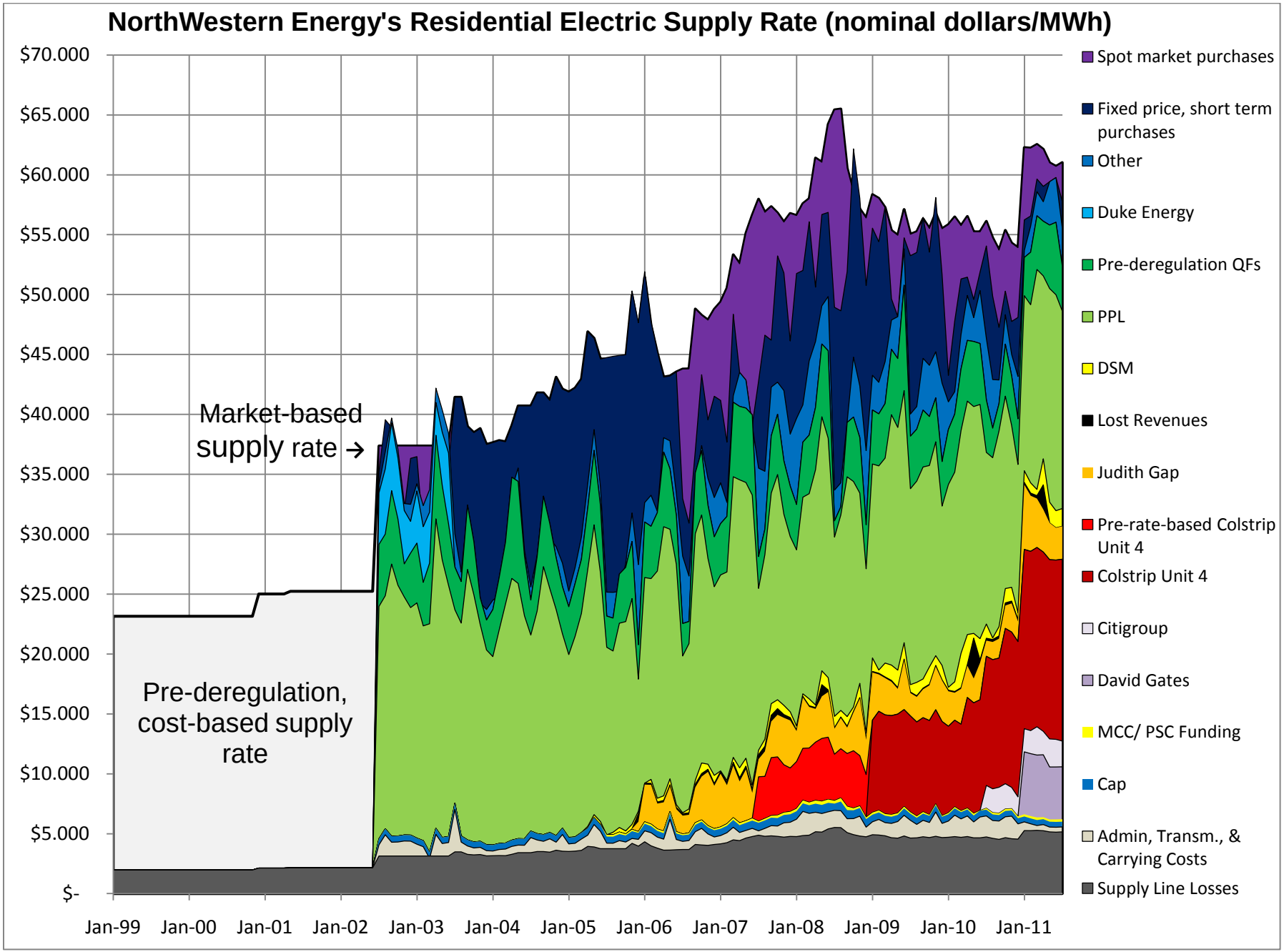
The other line not shown is a deferral of supply costs, and may be a credit or debit depending on whether NorthWestern over- or under-collected its approved supply costs during the previous regulatory period. Because this deferral also does not affect the approved amount that NorthWestern collects, but merely when it collects, it does not appear on the graphs.

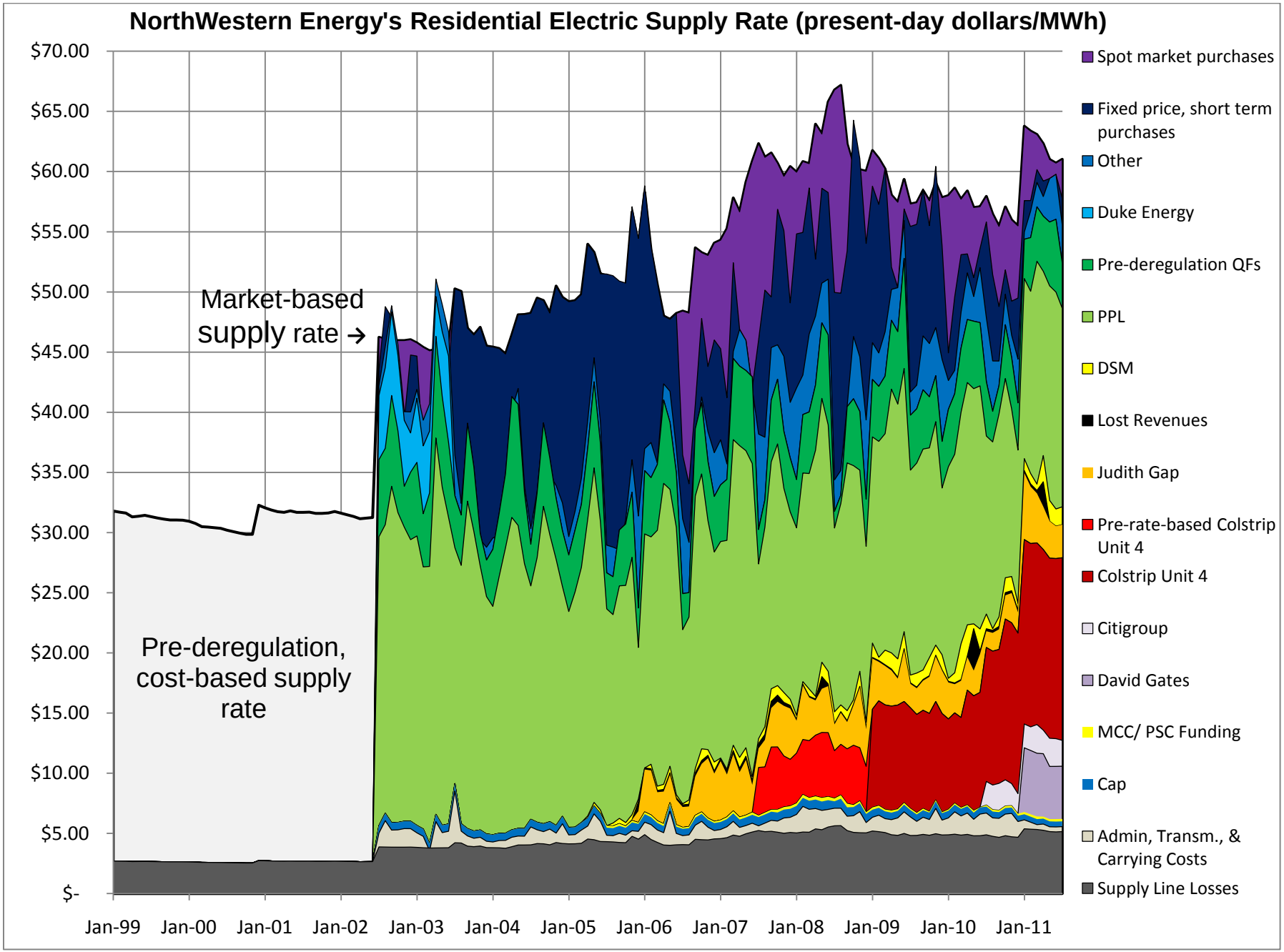
Finally, the only other component of the residential supply rate that does not appear on the graphs is the discount for certain retired NorthWestern employees, whose personal consumption NorthWestern reduces by forty percent before calculating the supply rate, effectively shifting part of their costs to the other nine classes of default customers, including the residential class. For residential customers, this discount adds only about $0.02 to the roughly $60/MWh supply rate.

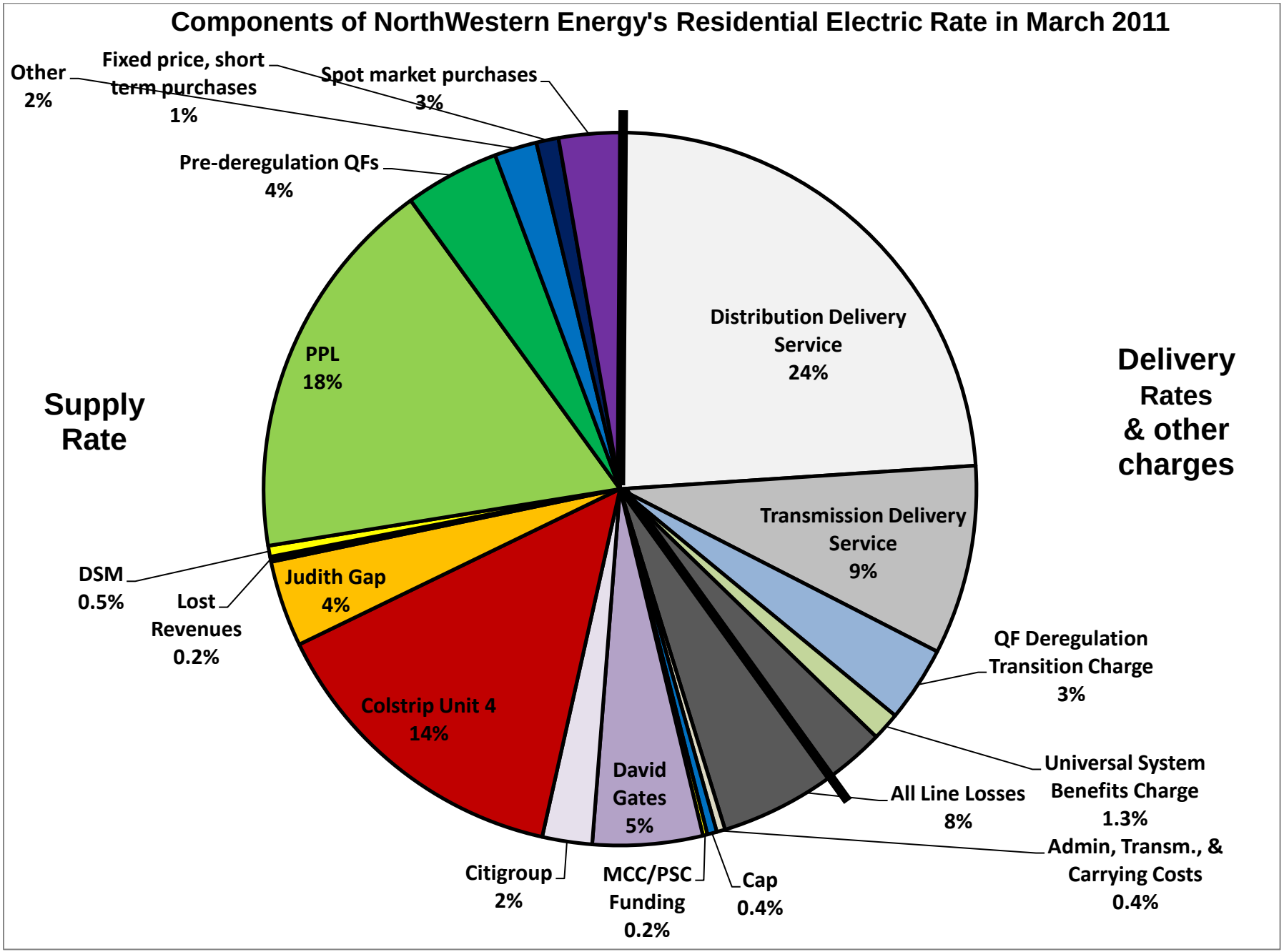
[5] *Portland Gen. Elec. Co. v. BPA*, 501 F.3d 1009, 1014 (9th Cir. 2007).

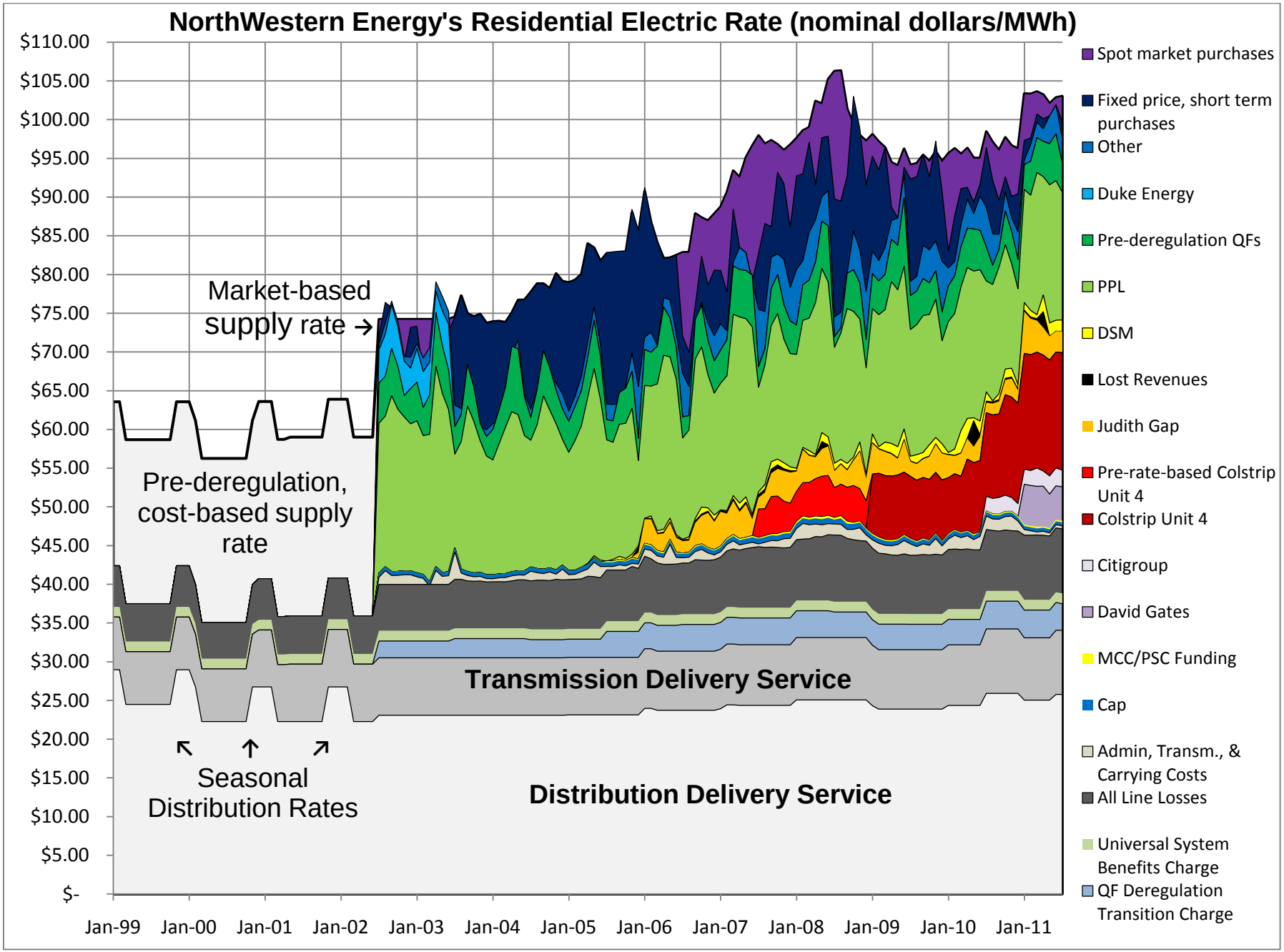
Components of NorthWestern Energy's Residential Electric Supply Rate in March 2011

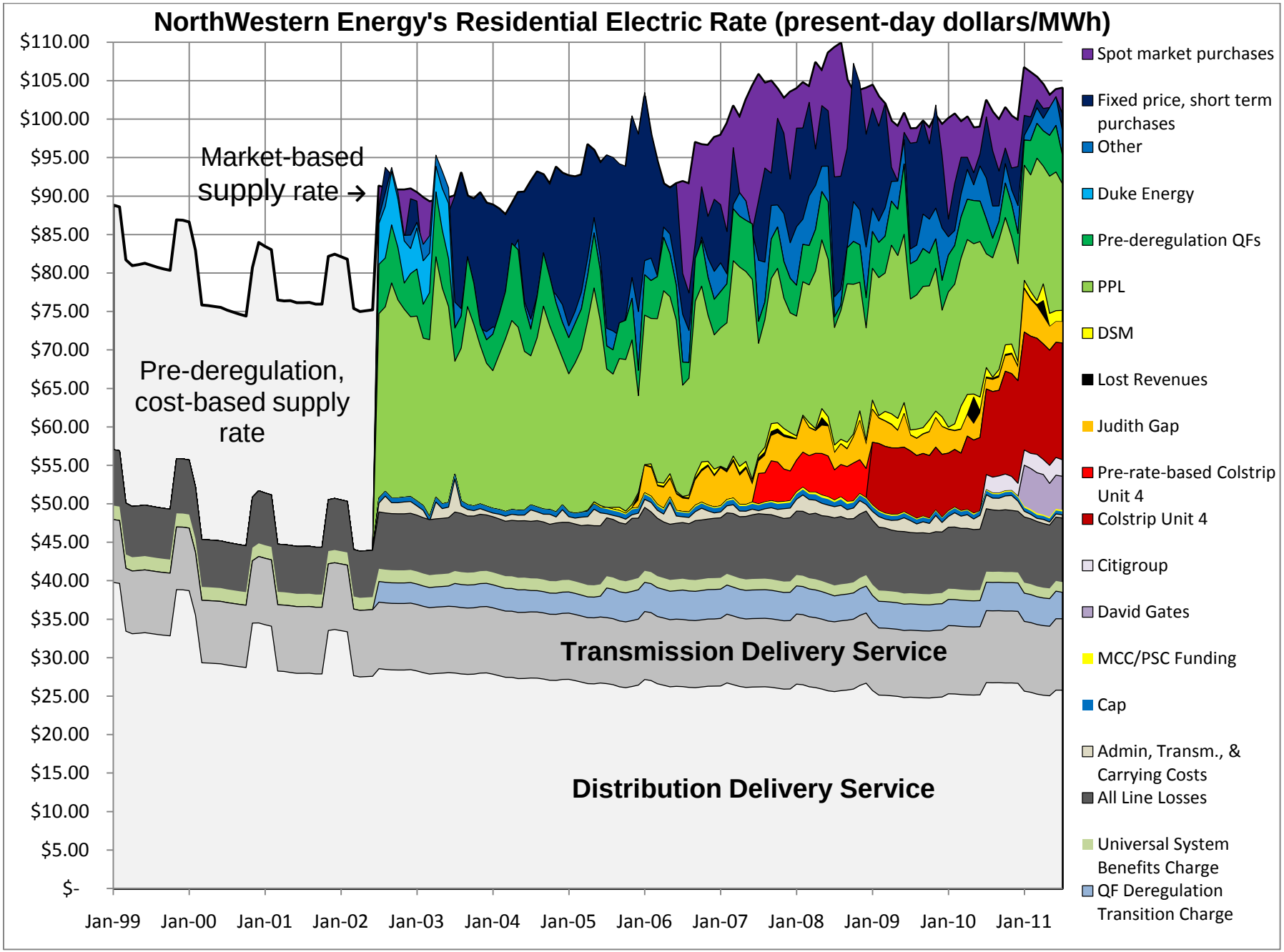


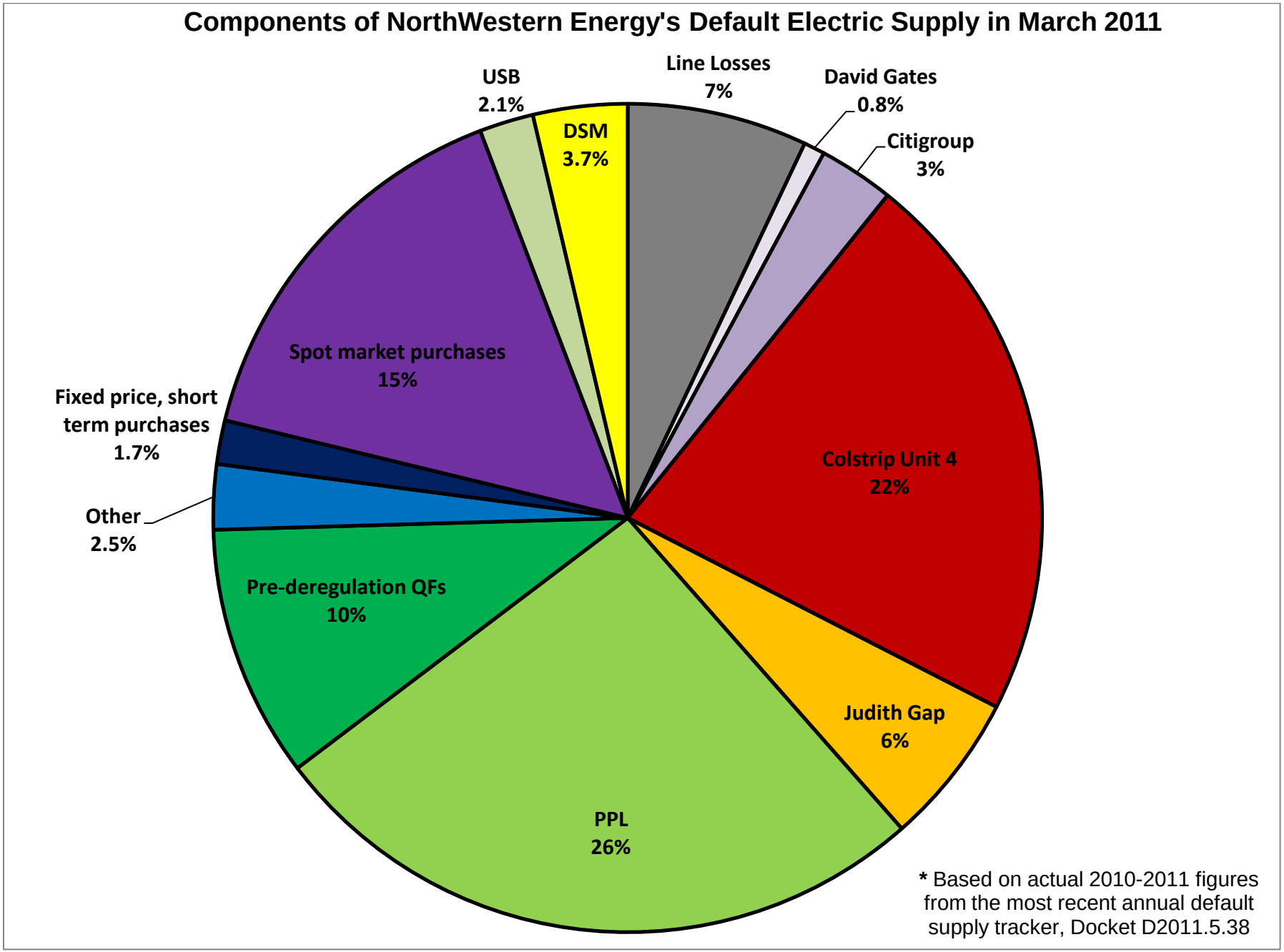

NorthWestern Energy's Residential Electric Supply Rate (nominal dollars/MWh)
$70.000
$65.000
$60.000
$55.000
$50.000
$45.000
$40.000
$35.000
$30.000
$25.000
$20.000
$15.000
$10.000
$5.000
$-
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Market-based supply rate →
Pre-deregulation, cost-based supply rate
Spot market purchases
Fixed price, short term purchases
Other
Duke Energy
Pre-deregulation QFs
PPL
DSM
Lost Revenues
Judith Gap
Pre-rate-based Colstrip Unit 4
Colstrip Unit 4
Citigroup
David Gates
MCC/ PSC Funding
Cap
Admin, Transm., & Carrying Costs
Supply Line Losses

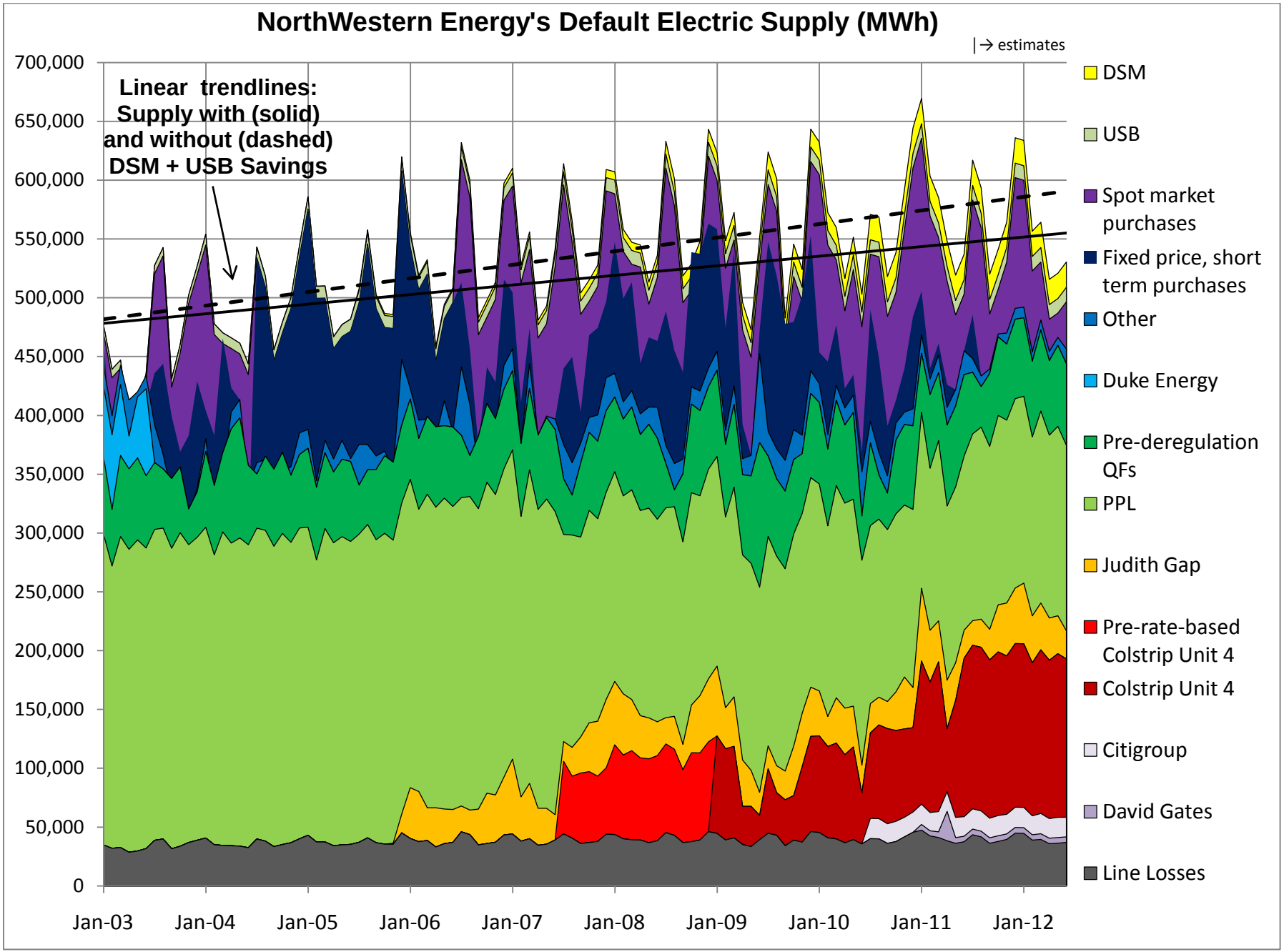

NorthWestern Energy's Residential Electric Supply Rate (present-day dollars/MWh)
$70.00
$65.00
$60.00
$55.00
$50.00
$45.00
$40.00
$35.00
$30.00
$25.00
$20.00
$15.00
$10.00
$5.00
$-
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Market-based supply rate →
Pre-deregulation, cost-based supply rate
Spot market purchases
Fixed price, short term purchases
Other
Duke Energy
Pre-deregulation QFs
PPL
DSM
Lost Revenues
Judith Gap
Pre-rate-based Colstrip Unit 4
Colstrip Unit 4
Citigroup
David Gates
MCC/ PSC Funding
Cap
Admin, Transm., & Carrying Costs
Supply Line Losses

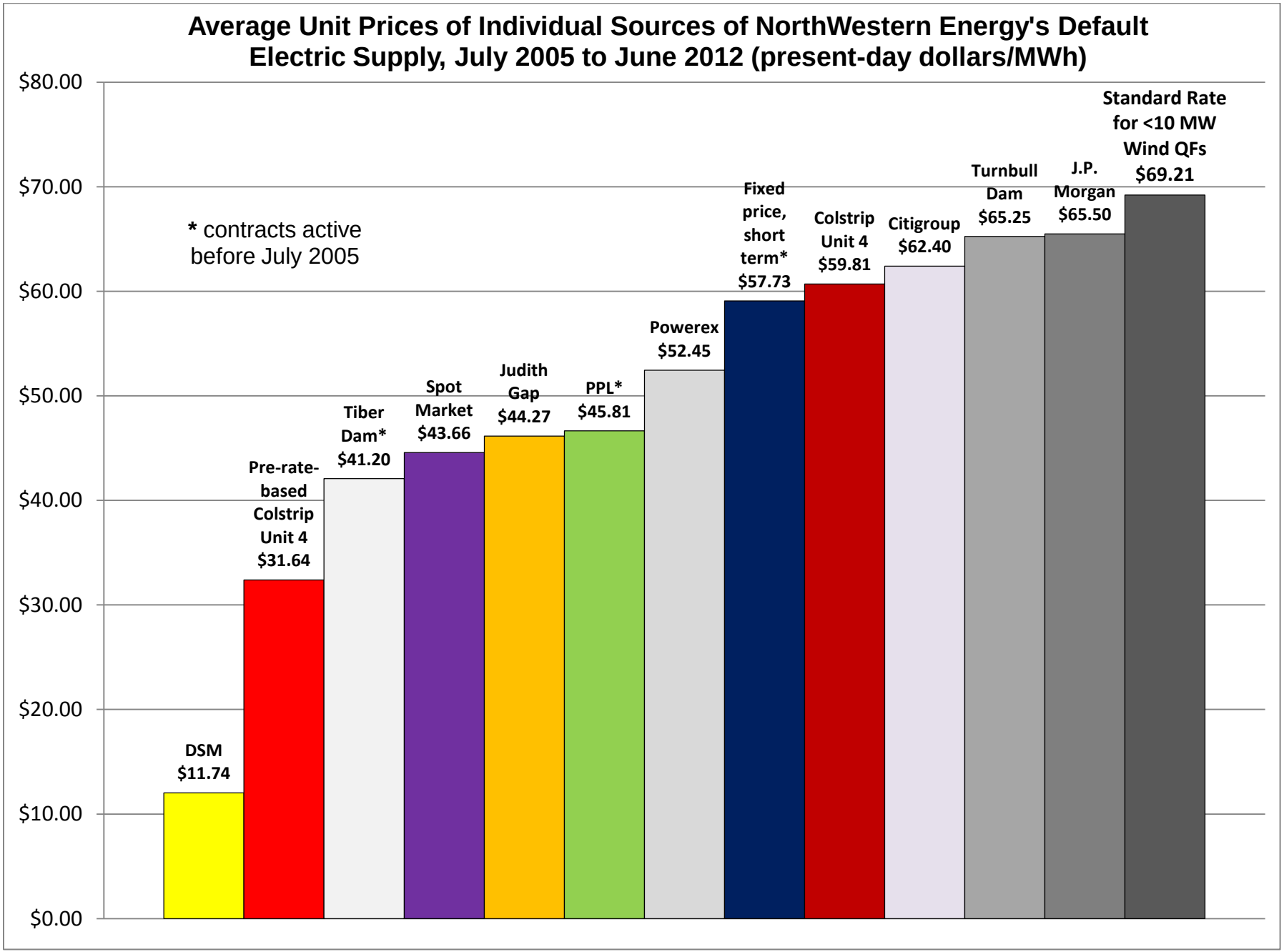

Components of NorthWestern Energy's Residential Electric Rate in March 2011
Other 2%
Fixed price, short term purchases 1%
Spot market purchases 3%
Pre-deregulation QFs 4%
PPL 18%
Supply Rate
Distribution Delivery Service 24%
Transmission Delivery Service 9%
QF Deregulation Transition Charge 3%
Universal System Benefits Charge 1.3%
All Line Losses 8%
Admin, Transm., & Carrying Costs 0.4%
Cap 0.4%
MCC/PSC Funding 0.2%
Citigroup 2%
David Gates 5%
Colstrip Unit 4 14%
Judith Gap 4%
DSM 0.5%
Lost Revenues 0.2%
Delivery Rates & other charges

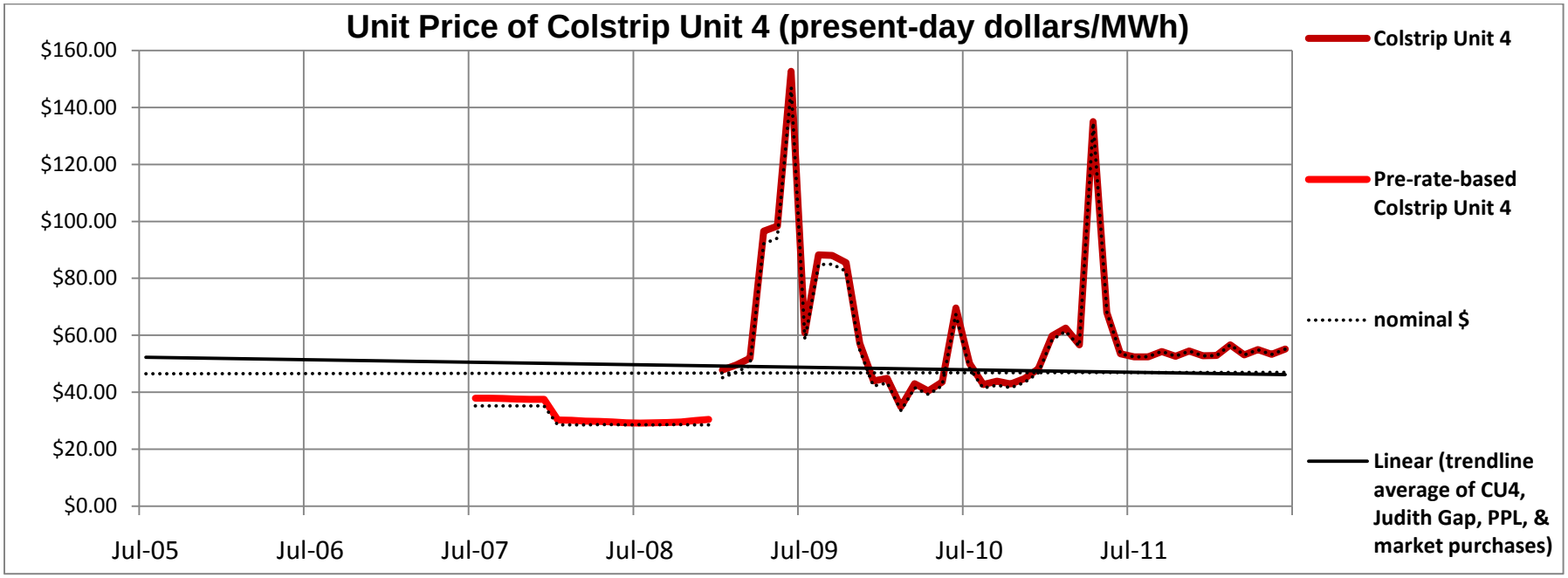

NorthWestern Energy's Residential Electric Rate (nominal dollars/MWh)
$110.00
$105.00
$100.00
$95.00
$90.00
$85.00
$80.00
$75.00
$70.00
$65.00
$60.00
$55.00
$50.00
$45.00
$40.00
$35.00
$30.00
$25.00
$20.00
$15.00
$10.00
$5.00
$-
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Market-based supply rate →
Pre-deregulation, cost-based supply rate
Transmission Delivery Service
Seasonal Distribution Rates
Distribution Delivery Service
Spot market purchases
Fixed price, short term purchases
Other
Duke Energy
Pre-deregulation QFs
PPL
DSM
Lost Revenues
Judith Gap
Pre-rate-based Colstrip Unit 4
Colstrip Unit 4
Citigroup
David Gates
MCC/PSC Funding
Cap
Admin, Transm., & Carrying Costs
All Line Losses
Universal System Benefits Charge
QF Deregulation Transition Charge

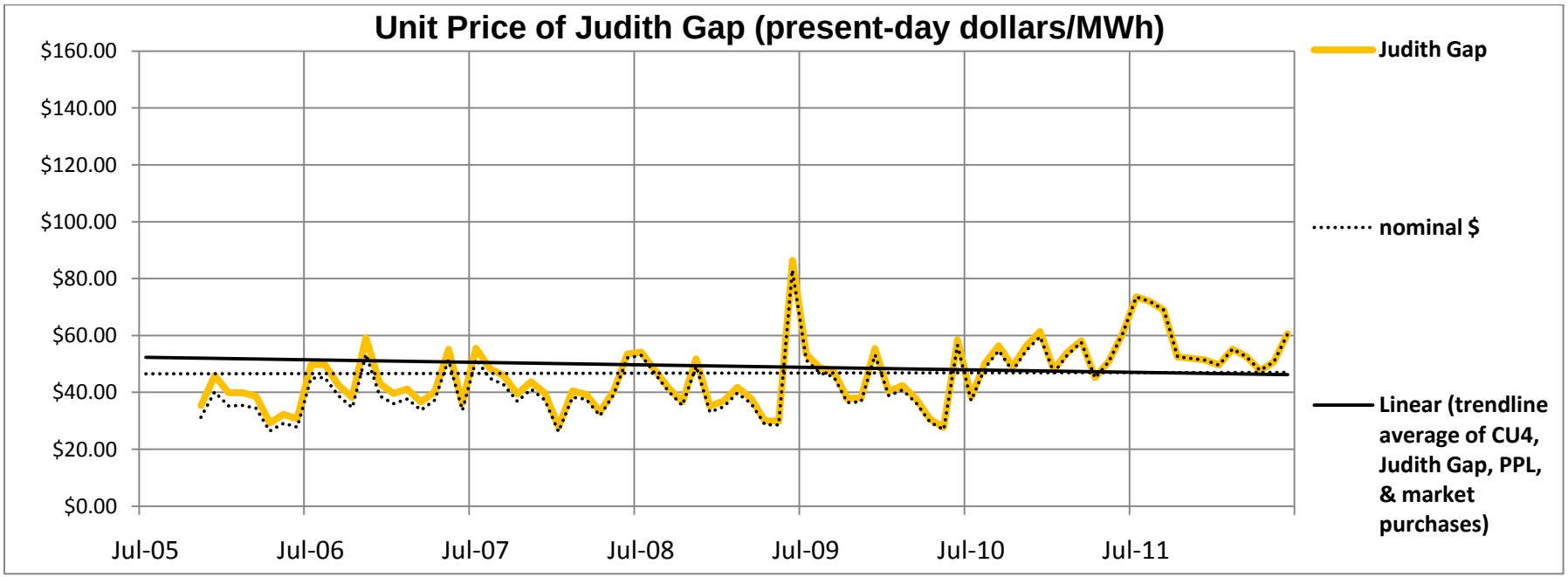

NorthWestern Energy's Residential Electric Rate (present-day dollars/MWh)
$110.00
$105.00
$100.00
$95.00
$90.00
$85.00
$80.00
$75.00
$70.00
$65.00
$60.00
$55.00
$50.00
$45.00
$40.00
$35.00
$30.00
$25.00
$20.00
$15.00
$10.00
$5.00
$-
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Market-based supply rate →
Pre-deregulation, cost-based supply rate
Transmission Delivery Service
Distribution Delivery Service
Spot market purchases
Fixed price, short term purchases
Other
Duke Energy
Pre-deregulation QFs
PPL
DSM
Lost Revenues
Judith Gap
Pre-rate-based Colstrip Unit 4
Colstrip Unit 4
Citigroup
David Gates
MCC/PSC Funding
Cap
Admin, Transm., & Carrying Costs
All Line Losses
Universal System Benefits Charge
QF Deregulation Transition Charge

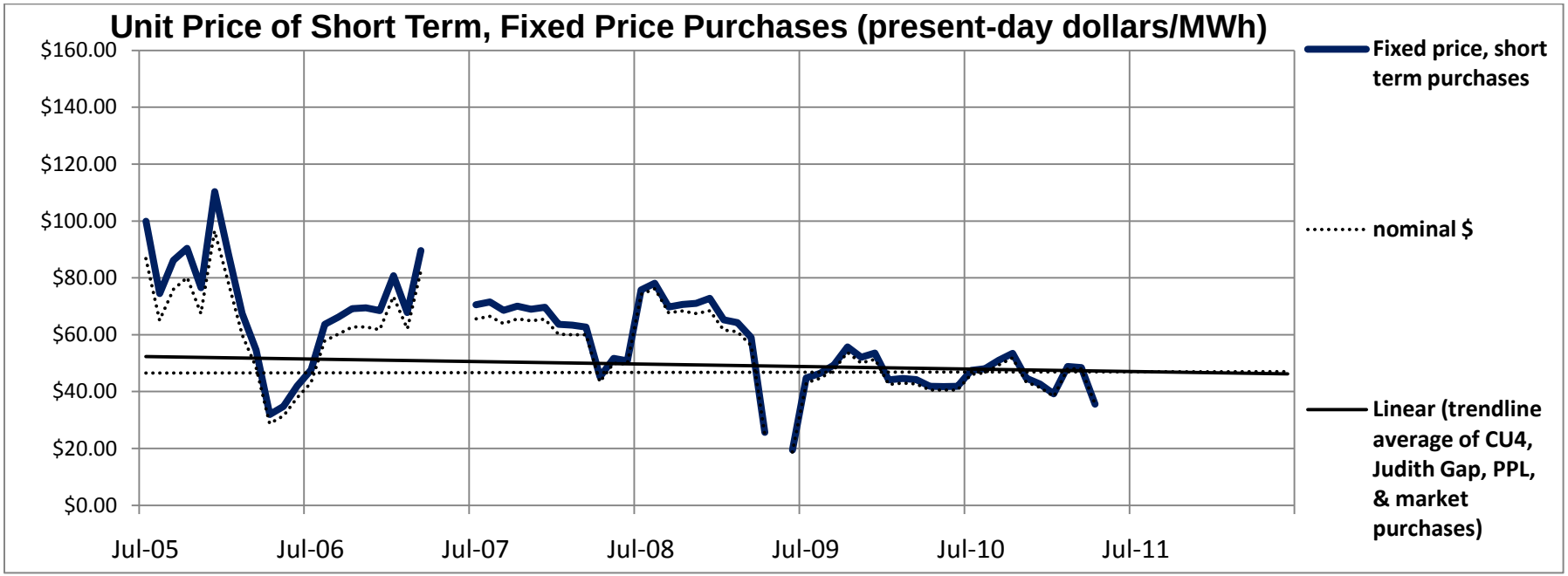

Components of NorthWestern Energy's Default Electric Supply in March 2011
Line Losses
7%
David Gates
0.8%
Citigroup
3%
Colstrip Unit 4
22%
Judith Gap
6%
PPL
26%
Pre-deregulation QFs
10%
Other
2.5%
Fixed price, short term purchases
1.7%
Spot market purchases
15%
USB
2.1%
DSM
3.7%
* Based on actual 2010-2011 figures from the most recent annual default supply tracker, Docket D2011.5.38

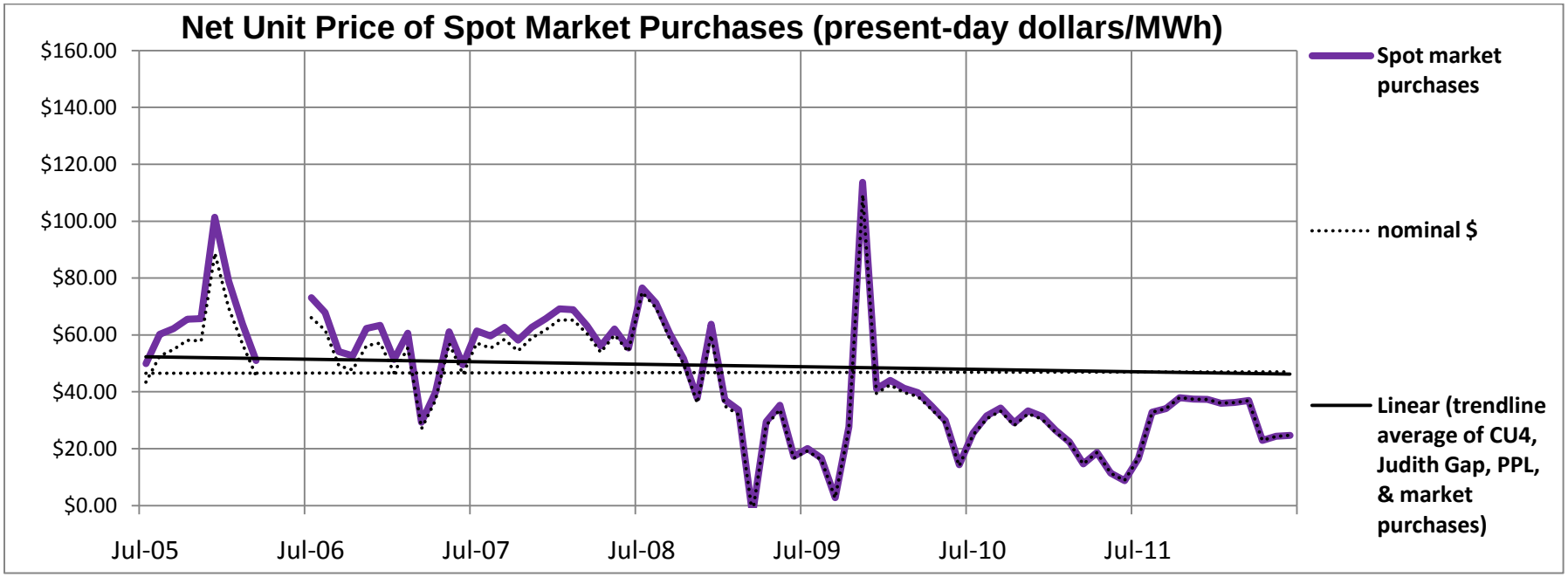

NorthWestern Energy's Default Electric Supply (MWh)
|→ estimates
Linear trendlines:
Supply with (solid)
and without (dashed)
DSM + USB Savings
700,000
650,000
600,000
550,000
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
DSM
USB
Spot market purchases
Fixed price, short term purchases
Other
Duke Energy
Pre-deregulation QFs
PPL
Judith Gap
Pre-rate-based Colstrip Unit 4
Colstrip Unit 4
Citigroup
David Gates
Line Losses

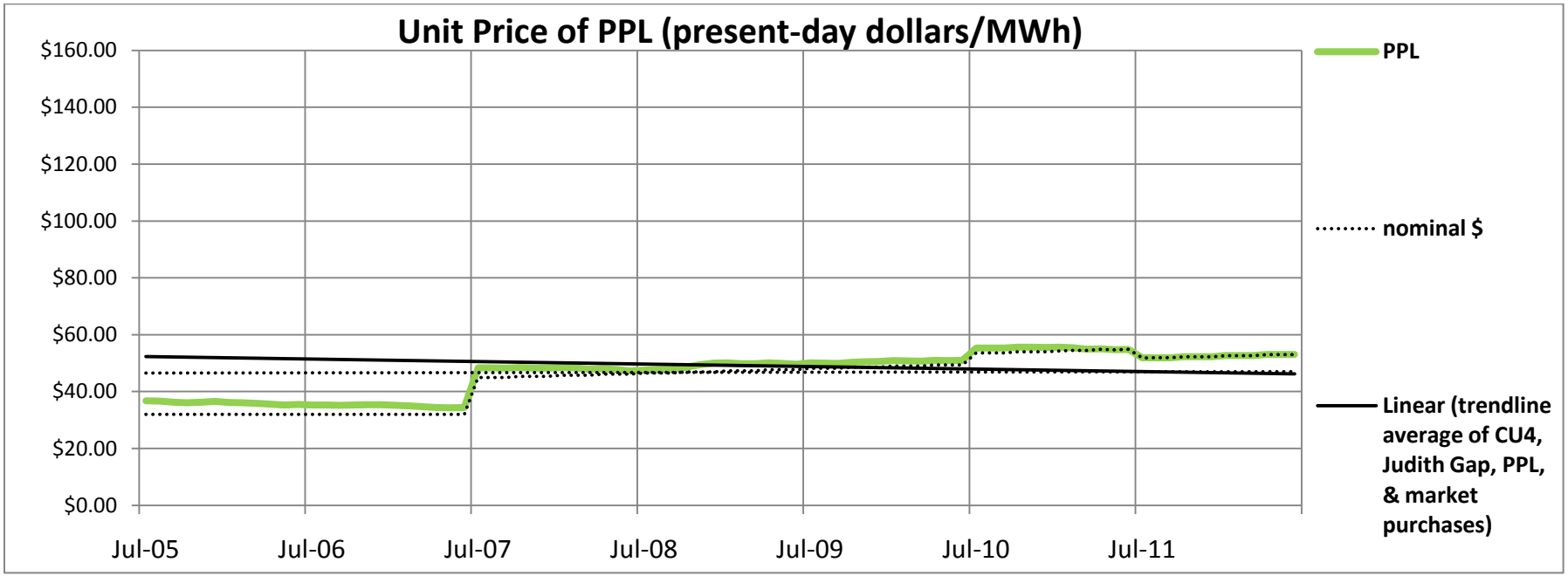

Average Unit Prices of Individual Sources of NorthWestern Energy's Default Electric Supply, July 2005 to June 2012 (present-day dollars/MWh)
$80.00
$70.00
$60.00
$50.00
$40.00
$30.00
$20.00
$10.00
$0.00
* contracts active before July 2005
DSM $11.74
Pre-rate-based Colstrip Unit 4 $31.64
Tiber Dam* $41.20
Spot Market $43.66
Judith Gap $44.27
PPL* $45.81
Powerex $52.45
Fixed price, short term* $57.73
Colstrip Unit 4 $59.81
Citigroup $62.40
Turnbull Dam $65.25
J.P. Morgan $65.50
Standard Rate for <10 MW Wind QFs $69.21

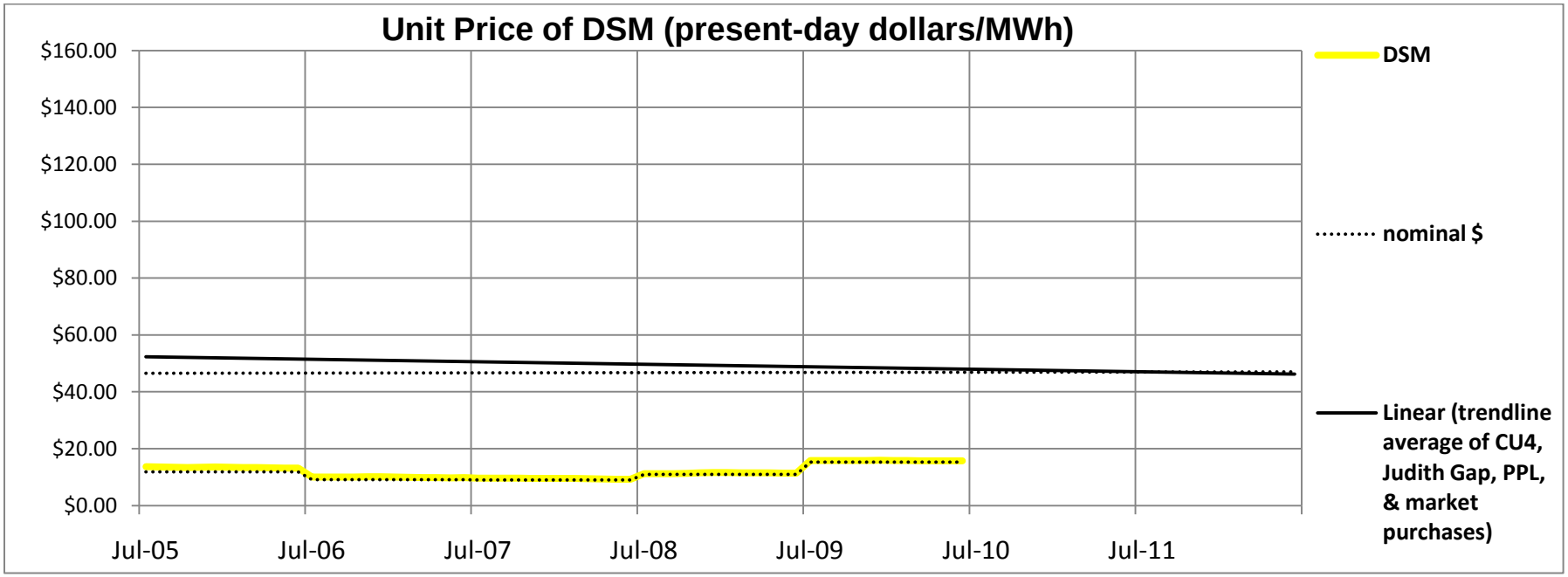

Unit Price of Colstrip Unit 4 (present-day dollars/MWh)
$160.00
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Colstrip Unit 4
Pre-rate-based Colstrip Unit 4
nominal $
Linear (trendline average of CU4, Judith Gap, PPL, & market purchases)


Unit Price of Judith Gap (present-day dollars/MWh)
$160.00
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Judith Gap
nominal $
Linear (trendline average of CU4, Judith Gap, PPL, & market purchases)


Unit Price of Short Term, Fixed Price Purchases (present-day dollars/MWh)
$160.00
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Fixed price, short term purchases
nominal $
Linear (trendline average of CU4, Judith Gap, PPL, & market purchases)


Net Unit Price of Spot Market Purchases (present-day dollars/MWh)
$160.00
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Spot market purchases
nominal $
Linear (trendline average of CU4, Judith Gap, PPL, & market purchases)


Unit Price of PPL (present-day dollars/MWh)
$160.00
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
PPL
nominal $
Linear (trendline average of CU4, Judith Gap, PPL, & market purchases)


Unit Price of DSM (present-day dollars/MWh)
$160.00
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
DSM
nominal $
Linear (trendline average of CU4, Judith Gap, PPL, & market purchases)